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Performance Measurement of It Sector Through Balanced Score Card In Chennai



***J. Jerlin Violet ** H.Josiah**

* Asst. Prof, Dept. of Management studies, RMD Engineering College, Chennai.

** Asst. Prof, Dept. of Management Studies, DMI College of Engineering, Chennai.

A B S T R A C T

Performance measurement has received considerable criticisms in the 1980s and early 1990s for being restricted to financial measures and robust accounting methods in evaluating the performance of organizations or more specifically their profitability. Mostly, it is argued, that these measures ignore the softer less measurable performance indicators as well as the relationship between different business units and their variable objectives. In response to these criticisms and dissatisfactions with the traditional system new performance measurement frameworks have developed, out of which, the most well-known and commonly used is the balanced scorecard. The data and information have been collected from 300 employees from IT sector in Chennai by adopting multi-stage random sampling technique through pre-tested, structured interview schedule through direct interview method and pertain to the year 2009-2010.

The foregoing analysis indicates that majority of the employees are males and half of them belong to the functional area of production. It is clear that more than half of the employees belong to the age group of 26-30 years and more than one third of employees belong to the income group of Rs. 35001-40000. Nearly one third of employees are M.Tech graduates and more than two-third of employees have the total experience of less than three years.

The sales margin, price relative to competitors', brand rating and hours of training invested are better than target levels in IT sector in Chennai. The factor analysis for benefits and outcomes of balance scorecard indicated that there are six independent groups and these factors are grouped in to clarity, efficiency, improvement, involvement, competency and quality. In order for an organization to make effective use of the results of performance assessment, it must be able to make the transition from assessment to management. It must also be able to anticipate needed changes in the strategic direction of the organization and have a methodology in place for effecting strategic change. Successful accomplishment of these two tasks represents the foundation of good performance management. Both of these tasks can be greatly facilitated by use of the Balanced Scorecard.

Key Words: Balanced Scorecard, Factor Analysis, IT sector, Performance Measurement

Introduction

Performance measurement is a fundamental building block of Total Quality Management (TQM) and a total quality organization. Historically, organizations have always measured performance in some way through the financial performance, be this success by profit or failure through liquidation. However, traditional performance measures, based on cost accounting information, provide little to support organizations on their quality journey, because they do not map process performance and improvements seen by the customer. In a successful total quality organization, performance will be measured by the improvements seen by the customer as well as by the results delivered to other stakeholders.

Performance measurement is universally used to assess how well someone or something has done against set objectives or peers. Each portfolio is managed against guidelines and parameters (such as duration or weights by sector, quality rating, country, region) that have been established before the portfolio is launched. Many portfolios also have benchmarks established against which they will be measured, typically at least monthly. While the portfolio manage-

ment team makes trading decisions within the guidelines of each portfolio, how well the team has executed these decisions is determined through the portfolio's return and performance against its benchmark or peer group. Performance measurement has received considerable criticisms in the 1980s and early 1990s for being restricted to financial measures and robust accounting methods in evaluating the performance of organizations or more specifically their profitability. Mostly, it is argued, that these measures ignore the softer less measurable performance indicators as well as the relationship between different business units and their variable objectives.

In response to these criticisms and dissatisfactions with the traditional system new performance measurement frameworks have developed, out of which, the most well-known and commonly used is the balanced scorecard. The concept of balanced scorecard (BSC) was first introduced by Robert S. Kaplan and David P. Norton (1992) in Harvard Business Review article. The BSC helps determine what is important for existence and sustainability by addressing multiple layers of the firm. The BSC model includes both financial and non-financial measures and

managers can get information about the organizational vision and strategies, which integrate with organizational performance. The performance measurement tools can help businesses to evaluate their resource allocation process in order to determine how resources can be better managed and distributed to the appropriate channels. With this background, the present study was attempted to measure the performance of the employees of IT sector through balanced score card in Chennai.

Methodology

Among the different IT hubs in Tamil Nadu, the Chennai city has been purposively selected for the present study. The IT firms have been selected randomly followed by the employees from IT firms are again randomly selected for the present study by adopting multi-stage random sampling technique through pre-tested, structured interview schedule through direct interview method. The data and information have been collected from 300 employees from IT sector and financial statistics from IT firms in Chennai and pertain to the year 2009-2010.

Statistical Techniques

In order to understand the socio economic characteristics of employees of IT sector, the percentage analysis and frequency distribution were worked out. The balanced scorecard was constructed based on the financial, customer, internal process and learning and growth measures. In order to identify the benefits and outcomes of balance scorecard, the factor analysis has been employed with principal component extraction with varimax rotation. The factor analysis can be expressed as:

$$Z_{ij} = a_1 f_{1j} + a_2 f_{2j} + \dots + a_m f_{mj} + e_{ij}$$

Where as,

Z = Benefits and Outcomes of Balance Scorecard

a = Factor Loadings

f = Factor Score

e = Residual term accounting for Errors or other Source of Variation.

Results and Discussions

Socio-Economic Characteristics of Employees of IT Sector The socio-economic characteristics of employees of IT sector were analyzed and the results are presented in **See Table 1.**

The results indicated that about 54.33 per cent were males while the rest of 45.67 per cent were females and about 51.00 per cent of employees belonged to the functional area of production followed by marketing (38.30 per cent), human resource (7.00 per cent) and finance (3.70 per cent). The results showed that about 34.33 per cent of employees were junior executive followed by programmer (30.68 per cent),

senior executive (20.33 per cent), HR executive (7.00 per cent), tester (4.00 per cent), finance executive (2.33 per cent) and accounting (1.33 per cent). From the table, it was clear that about 58.00 per cent of employees belonged to the age group of 26-30 years followed by 31-35 years (25.67 per cent), 36-40 years (11.00 per cent), less than 25 years (3.00 per cent) and more than 40 years (2.33 per cent). It was apparent that about 42.67 per cent of employees belonged to the income group of Rs. 35001-40000 followed by Rs.30001-35000(24.67 per cent), less than Rs. 25000(18.00 per cent), Rs. 25001-30000(13.33 per cent) and more than Rs. 40000(1.33 per cent).

The results indicated that about 66.30 per cent were married while the rest of 33.70 per cent were unmarried and about 60.67 per cent of employees were permanent while the rest of 39.33 per cent were temporary. It was inferred that about 24.00 per cent of employees were M.Tech followed by B.Tech (21.70 per cent), BE (21.00 per cent), ME (17.00 per cent), MCA (11.00 per cent), CA (2.60 per cent), M.Com (1.70 per cent) and MBA (1.00 per cent). The educational qualification of the rest of employees was varying from Diploma (3.00 per cent) to CA (1.00 per cent). The results showed that about 72.67 per cent of employees had the total experience of less than three years followed by 6.1-9.0 years (16.00 per cent), 3.1-6.0 years (7.67 per cent) and more than nine years (3.66 per cent). The results showed that about 59.67 per cent of employees had the family size of 3.1- 5.0 followed by less than three (39.33 per cent) and more than five (1.00 per cent). Balanced Score Card for Performance of Employees of IT Sector

The balanced score card for performance of employees of IT sector was constructed and the results were presented in **see Table 2.** The results showed that the actual of financial, customer, internal process and learning and growth measures of the employees were achieved more than that of targets in IT sector.

Among the financial measures, sales margin was better than target (12.01 per cent) followed by sales growth (11.67 per cent) and debt-to-asset ratio (8.90 per cent). Among the customer measures, price relative to competitors' price was better than target (11.46 per cent) followed by customer satisfaction rating (11.28 per cent). The brand rating of internal process measures was better than target (11.08 per cent) followed by time process customer return (8.65 per cent) and number of stock-outs (8.47 per cent). The hours of training invested of learning and growth measures was better than target (11.43 per cent) followed by employee satisfaction (11.25 per cent) and employee suggestions (9.53 per cent).

Table-1: Socio-Economic Characteristics of Employees of IT Sector

Variables with Category	Respondents(N=300)		Variables with Category	Respondents(N=300)	
	Number	PerCent		Number	PerCent
Gender			Designation		
Male	163	54.33	Accounting	4	1.33
Female	137	45.67	Junior Executive	103	34.33
Functional Area			Senior Executive	61	20.33
Finance	11	3.70	Programmer	92	30.68
Human Resource	21	7.00	Tester	12	4.00
Production	153	51.00	Finance Executive	7	2.33
Marketing	115	38.30	HR Executive	21	7.00
Age(Years)			Monthly Income(Rs)		
<25	9	3.00	< 25000	54	18.00
26-30	174	58.00	25001-30000	40	13.33
31-35	77	25.67	30001-35000	74	24.67
36-40	33	11.00	35001-40000	128	42.67
>40	7	2.33	>40000	4	1.33
Marital Status			Nature of Employment		
Married	199	66.30	Permanent	182	60.67
Unmarried	101	33.70	Temporary	118	39.33
Educational Qualifications			Experience(Years)		
B.Tech	65	21.70	<3	218	72.67
B.E.	63	21.00	3.1-6.0	23	7.67
CA	8	2.60	6.1-9.0	48	16.00
M.Com	5	1.70	>9.0	11	3.66
ME	51	17.00	Family Size		
M.Tech	72	24.00	<3	118	39.33
MCA	33	11.00	3.1-5.0	179	59.67
MBA	3	1.00	>5.0	3	1.00

Table-2. Balanced Score Card for Performance of Employees of IT Sector

Measures	Target	Actual	Per cent Better than Target
Financial			
Sales margin	60 %	72.04%	12.01
Sales growth	15%	17.50%	11.67
Debt-to-Asset Ratio	< 20%	17.80%	8.90
Customer			
Price relative to competitors' price	+ 7%	8.02%	11.46
Customer satisfaction rating	75%	84.60%	11.28
Internal Process			
Brand rating	80%	88.60%	11.08
Number of stock-outs	< 3 times	2.54	8.47
Time to process customer return	< 4 min	3.46	8.65
Learning and Growth			
Employee satisfaction	80%	90.02%	11.25
Employee suggestions	3 times	2.86	9.53
Hrs of training invested	80	91.40	11.43

Benefits and Outcomes of Balanced Score Card-Factor Analysis In order to identify the benefits and outcomes of balance scorecard, the factor analysis has been employed with principal component extraction with varimax rotation and the results obtained through rotated component matrix were presented in Table 3. There were six independent groups were extracted which accounted for a total of 62.41 per cent of variations on the 15 benefit variables. The each of six factors contributed 11.96 per cent, 10.86 per cent, 10.25 per cent, 9.98 per cent, 9.74 per cent, and 9.62 per cent respectively.

Factor-I: From the table, it is inferred that out of 15 benefits and outcomes, four variables have their high, relatively tightly grouped factor loadings on factor-I.

This factor consists of:

- * Communicates the strategy to employees' individual performance. (0.57)
- * Clarifies the organizational vision, strategic plans and expected performance to every level of the organization efficiently and effectively. (0.69)
- * Guides and monitors the execution of the organizational strategies. (-0.77)
- * Encourages employees to consider the impact of their decisions and performances on the organizational profitability (-0.71)

Hence, this factor is named as " CLARITY"

Factor-II: is formed with:

- * Greater accountability of employees (0.80)
- * Improves alignment among divisional or individual goals and the organizational goal (0.82)

Table-3. Factor Analysis for Benefits and Outcomes of Balanced Score Card

Benefits and Outcomes	Rotated Factor Loadings on					
	Factor I	Factor II	Factor III	Factor IV	Factor V	Factor VI
Establishes certain criteria to measure, set standards or targets to align initiatives						.720
Communicates the strategy to employees' individual performance.	.573					
Clarifies the organizational vision, strategic plans and expected performance to every level of the organization efficiently and effectively.	.694					
Guides and monitors the execution of the organizational strategies.	-.773					
Provides a good framework for decision-making.			-.635			
Greater accountability of employees		.800				
Encourages learning and continuous improvement.			.559			
Develops strategies to stand in competition					-.682	
More profitable since the adoption of the BSC.					.695	
Increases employees' understanding of strategies.				.682		
Encourages employees to consider the impact of their decisions and performances on the organizational profitability	-.714					
Helps each division to reach its goals and helps the entire company get closer to its ultimate goal.						.629
Improves alignment among divisional or individual goals and the organizational goal		.819				
Achieves a balance between backward- and forward-looking performance measures.		-.774				
Translates vision into values and daily operations effectively				.611		
Eigen Value	1.87	1.73	1.65	1.39	1.37	1.21
% of Variance	11.96	10.86	10.25	9.98	9.74	9.62
Cumulative % of Variance	11.96	22.82	33.07	43.05	52.79	62.41

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 13 iterations.

Source: Primary & Computed Data

* Achieves a balance between backward- and forward-looking performance measures. (-0.77) * These variables are named as "EFFICIENCY".

Factor-III: This factor includes:

* Provides a good framework for decision-making. (-0.64) * Encourages learning and continuous improvement. (0.56)

These two variables are named as "IMPROVEMENT".

Factor-IV: This factor is formed with:

* Increases employees' understanding of strategies. (0.68) * Translates vision into values and daily operations effectively (0.61)

This factor is named as "INVOLVEMENT".

Factor-V: This factor includes:

* Develops strategies to stand in competition (-0.68) * More profitable since the adoption of the BSC. (0.70) The factor is named as "COMPETENCY".

Factor-VI: This factor is formed with:

* Establishes certain criteria to measure, set standards or targets to align initiatives (0.72)

* Helps each division to reach its goals and helps the entire company get closer to its ultimate goal. (0.63) This factor is named as "QUALITY".

Conclusion and Recommendations

The foregoing analysis indicates that majority of the employees are males and half of them belong

to the functional area of production. It is clear that more than half of the employees belong to the age group of 26-30 years and more than one third of employees belong to the income group of Rs. 35001-40000. Nearly one third of employees are M.Tech graduates and more than two-third of employees have the total experience of less than three years.

The sales margin, price relative to competitors', brand rating and hours of training invested are better than target levels in IT sector in Chennai. The factor analysis for benefits and outcomes of balance scorecard indicated that there are six independent groups and these factors are grouped in to clarity, efficiency, improvement, involvement, competency and quality. The strong leadership is paramount in creating a positive organizational climate for nurturing performance improvements. Senior management leadership is vital throughout the performance measurement and improvement process. Senior management should frequently review progress and the results of improvement efforts and should have frequent formal and informal meetings with employees and managers to show support for improvement efforts and implementation initiatives. Like any improvement initiative, implementing the Balanced Scorecard will bring about many changes within the organization. These changes may stir up some resistance based on unfounded fears about the perceived adverse effects of performance measurement and improvement. To overcome such re-

sistance and barriers, it is necessary to follow well known change management strategies like open communication with employees and managers to explain the uses, need for and benefits of the Balanced Scorecard, as well as their role. Another approach is to demonstrate "success stories" that show the non-threatening nature of the Balanced Scorecard methodology, including how an organization can target areas most in need of improvement, benchmark against best-in-class organizations and undertake performance improvements.

In order for an organization to make effective use of the results of performance assessment, it must be able to make the transition from assessment to management. It must also be able to anticipate needed changes in the strategic direction of the organization and have a methodology in place for effecting strategic change. Successful accomplishment of these two tasks represents the foundation of good performance management. Both of these tasks can be greatly facilitated by use of the Balanced Scorecard.

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